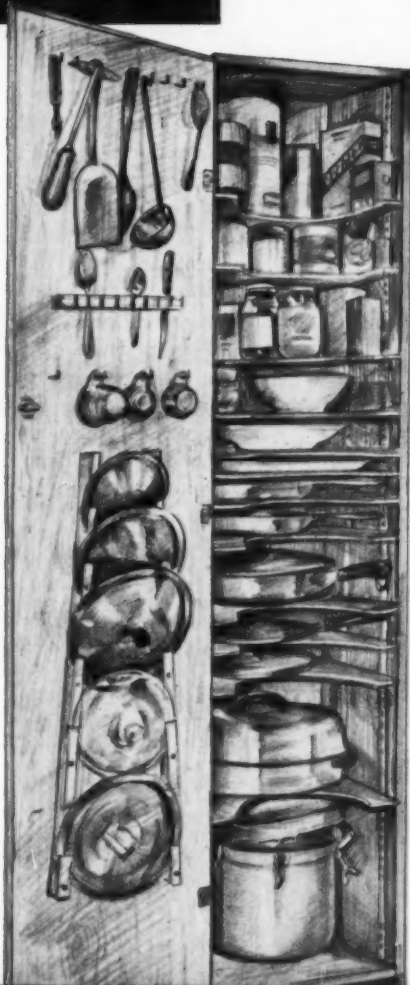


KITCHEN CUPBOARDS that *SIMPLIFY STORAGE*

Mary Koll Heiner
Helen E. McCullough



Foreword

ALL of the illustrations in this booklet are of *test equipment*. The cabinet work is crude but dimensions are accurate. Doors may be added where no doors are shown on certain cabinets.

Each cabinet illustrated is planned to simplify kitchen storage. All are built to spare the woman from needless lifting, reaching, stooping, and walking. They are offered to help you plan for your own convenience and comfort. They should make it easy for children to help in the kitchen.

The cabinets were designed to suggest several ways to simplify storage.

Take the ideas that seem good to you. You may be able to plan cabinets that suit your needs better than any shown here. But remember throughout that lifting the shoulders needlessly always means unnecessary work for your back. Be sure your cabinets simplify your work.

These cabinets were designed to hold supplies and equipment for an imaginary urban family of four. Adaptations are needed for any family to make the designs fit their space, supplies, and equipment. Unless otherwise stated, all measurements in this bulletin are for inside dimensions. The lumber used will determine outside measurements.

Reprinted AUGUST 1954

A publication of the
New York State College of Home Economics,
a unit of the State University of New York,
at Cornell University

KITCHEN CUPBOARDS

that SIMPLIFY STORAGE

Mary Koll Heiner
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TO SIMPLIFY kitchen work is the purpose of the storage cabinets shown in this bulletin. They are built first to spare the woman. Heights, widths, and depths of cabinets, shelves, and work spaces are kept within the reach of the woman of average height.² Taller women may use higher limits. How to find measurements suited to your height and reach and how to store your things accordingly are told in the following pages.

Each item is stored at the work center where it is *used first*. In this way, needless kitchen travel is reduced. There is no needless picking up and putting down of articles, and no needless opening and closing of doors and drawers.

Shelves are kept narrow and adjustable for three reasons. Everything can be seen at a glance. Only the thing you want needs to be lifted. The cabinet can be adjusted to meet the needs of each family.

Ideas on kitchen storage have changed. The cabinets shown here have been planned and built to reduce unnecessary work. Bowls, platters, plates, and pans of different sizes are no longer stacked one on the other. Cups, however, are by twos, and bowls and plates of the same size that may be taken out in groups are stacked. Row storage where you have to lift the front row to get to the back is not recommended, but cups, glasses, and canned goods of the same size, shape, and kind are placed in rows. This method of storing brings the shelves closer together and means that you will need more of them than in ordinary cupboards.

Storing all supplies of the same kind at one place is not so important as is storing them where you use them first, where you can see them quickly, and where you can grasp them easily even if you wear bifocal glasses.

Storage one row deep at the work center where the article is first used saves time, temper, and the woman.

¹This work is based upon investigations made in the Department of Economics of the Household and Household Management, under a grant established for the purpose at Cornell University by the American Central, Division—The Aviation Corporation, Connersville, Indiana.

²Average height is from 5 feet 3 inches to 5 feet 5 inches.

Dimensions used in these cabinets

The inside height of all cabinets illustrated in this bulletin is 6 feet 9 inches. The top shelf in any cabinet is no higher than 6 feet from the floor. No cabinet is wider than 4 feet nor deeper than 18 inches inside. Most of them are only 12 inches deep. Shelves are kept shallow in depth.

Packaged supplies fit on shelves 2, 3, 4, and 6 inches deep in cabinets 24 or 36 inches wide (figures 3, 4, and 5). Door racks for storage are 2 and 3 inches deep and shelves in the cabinets are 4 and 6 inches deep (figures 6, 7, 8). These shelves give storage one row deep. You can see all the supplies at a glance and you can reach any one without moving three or four other things to get the one you want.

Utensil shelves are no deeper than 16 inches for the things you use first at the range (figures 15 and 16); 12, 16, and 18 inches for those that you use first at the sink (figures 9, 10, 11, 12, 13). These deeper shelves should be either cut back in a curve (figure 16), or of the pull-out type (figure 11) so you can get what you want without wasting time or effort.

A narrow cabinet, 16 inches, (figure 16) is good for utensils used first at the range, whereas a wider cabinet, 28 inches, (figures 11 and 12) is useful at the sink.

Dishes and glassware for everyday use can be stored in cabinets 20 and 24 inches wide (figures 17 and 21). "Company" china is best stored in cabinets 36 and 48 inches wide (figures 18 and 19), because of the larger number of pieces. The shelves for dinner-size plates and for some bowls are 12 inches deep or less. You can store all other china and glasses on shelves 4, 6, and 8 inches deep. Glasses can be stored also on 3-inch deep racks on the doors (figure 17). No matter what size platter or chop plate you have, you can store it in a file in a 12-inch china cabinet (figure 20) or in a 16-inch storage-wall cabinet (figures 17 and 18).

THE WOMAN'S REACH SETS THE LIMITS

Simplified kitchen storage is based upon a few rules that any woman can follow. These are:

- Find your longest easy reach from your shoulder.
- Find your own comfortable reach from your elbow.
- Build cabinets within these limits.
- Store things where you use them *first*, within these limits.

Easy reach from shoulder

The plan is to keep a work space within reach from the elbow and not beyond the longest reach from the shoulder.

Here's how to find your reach. Look at figure 1. You will see that the woman swings her arm freely from the shoulder to get

the largest circle. See how her fingers are bent as if she were reaching for a cup.

Now stand back about a foot from the wall. Swing your arms in the same way. If you have a washable wall, use a pencil. If not, draw big, easy, make-believe circles. Do this two or three times. Then have someone make a dot and measure the highest point of the circle above your head. Get the lowest measure as your hands come back to your sides.

The top of the circle will be the height of the highest shelf that you can easily reach. The bottom of the circle shows where the lowest shelves *should* be. The two sides of the circle give the limits in width for work spaces and storage centers.

If you are wise, you will store things within your limits of greatest reach. Then you will keep things you use every day within these three limits of height, width, and depth, at the place where you use them first. This is one way to get rid of needless walking. It will save you from useless stretching and stooping. It may keep you from getting overtired and maybe overcross by the end of a hard day of necessary work.

The height of this top shelf for the woman of average height is 72 inches from the floor. The width from side to side is 48 inches. The lowest point is 25 inches from the floor. Find for yourself what are *your easy reaching limits*.

Comfortable reach from elbow

Next, find *your comfortable, or normal, working limits*. You will see from figure 1 that this is a much smaller circle. This is called *your normal work curve*. Notice that it is your elbow circle. Try it two or three times with each arm before you take the measures.

This elbow circle gives the limits of your most comfortable working or reaching area. It is easy on your upper arm and shoulder muscles.

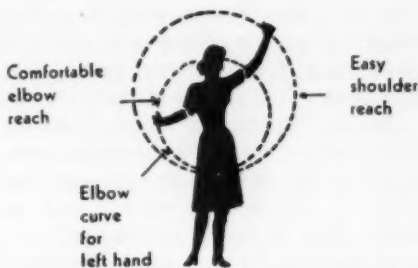


Figure 1. Work curve, woman standing

This dimension tells you where to store the supplies you use most often. Keep the heaviest of the daily pots and pans and dishes within this elbow circle if you want to spare your back. This normal or comfortable work curve is a good limit, too, for women with bifocal glasses.

The next question is how deep should the shelves and counters be? The depth of the shelves depends upon what you put on them. The depth of the counter depends upon your own work curve or elbow circle. If you are wise, you will keep counter depths within your own elbow circle as you sit or stand to work. The deeper the counter beyond your normal work curve, the more unnecessary work you do.

Comfortable work heights

Find your most comfortable work height at your three main work centers: the sink, the mix, the range. Many women like the same height for the base of the sink, for mixing foods, and for beating cakes. This same measure would give the height for the range as well. For the woman of average height, this measure is about 32 inches from the floor. This does not mean a streamlined kitchen. The sink has to have draining surfaces at the sides. If the sink is 6 inches deep, this makes your drainboards 38 inches from the floor. Your other work surfaces then will be 6 inches lower for comfort. With a sink 8 inches deep, the drainboards would be 40 inches from the floor. Or if you keep your counters 38 inches from the floor and have the deeper sink, your shoulders and your back are pulled down 2 inches below your comfort level. This can make you very tired.

Try these heights for yourself more than once before you decide upon a streamlined kitchen. And don't forget the children like to cook.

Depth for counters

Now to find *your own depth for counters*. Look at figure 2.

Take a table that you have fixed at your most comfortable working height. Again draw make-believe circles, this time marking them on the table. Draw one circle from the shoulders as you stand at the

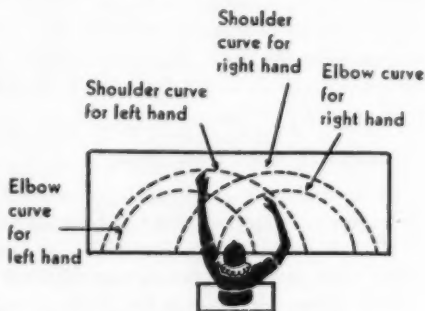


Figure 2. Work curve, woman sitting

table. This circle tells you that when you stand at your work, no counter should be deeper than that measure. Now draw the circle from your elbow to your bent fingertips. This circle gives the most comfortable depth of counter for you. If you sit to work, get a measure sitting before the table that is the best height for your comfort. This normal work curve or elbow circle for the woman of average height, when standing, shows that counters need to be only 16 inches deep. Stacking dishes may require up to 20 inches.

Such tests have shown that all storage cabinets can be kept at these depths or depths much less. The shelves, too, are not so wide as those in the usual cabinet.

STORAGE OF PACKAGED SUPPLIES

Of all the things stored in the kitchen, packaged supplies take the narrowest shelves. You can save time and useless work if you follow the plans shown in figures 3, 4, 5, 6, 7, 8.

Figure 3. Swing cabinet, range, and serve sections. This is a compact cabinet made of sections that swing open like a book. It holds the representative weekly supply of from 150 to 175 packaged, canned, and bottled foods; also, the 35 utensils required in the preparation of food. Storage is one row deep, and each item is easy to see and to grasp.

The over-all dimensions of the cabinet closed are 25 inches wide (24 inches inside) by 16 inches deep by 6 feet 9 inches high. It is divided at counter height, 36 inches from the floor. There are two sections below, and four above and below, $4\frac{1}{2}$ inches deep, and the upper center section facing left, 3 inches deep; there are fitted with a total of 13 adjustable shelves. These shelves hold the foods used first at the range and those served directly from the container. All shelves would require narrow guards to keep articles in place.



As you look at the cabinets, remember that each is planned for a woman's easy reach from the shoulder. Heavy, large supplies and those that are used often are placed toward the center of each cabinet, to keep them within a comfortable reach from the elbow as you stand in front of the cabinet. Things that are used less often are stored above and below that elbow circle. You can use the same plan with your supplies.

You will want to group supplies around the work center where you use them first, to get rid of useless trips back and forth as you get a meal ready.

Supplies used first with water and those used first at the mix center are grouped together because you usually make many trips from the mix center to the sink. When you are preparing food, you put bowls and beaters to soak and you try to clean up as you go. Most times you make only one trip to the range. That is when you put the food on to cook.

The supplies used first at the range are grouped with those that you can serve straight from the box, the can, or the bottle. These things can go at once to the table, just as cooked food does from the range. This plan helps reduce useless kitchen travel.

Use the combination that suits you best. This is a good way:

At the sink center

Store foods that need water first:

- Rice and dried foods that need to be washed or soaked
- Dried or canned soups or canned milk that need to have water added
- Cocoa mixed first with water
- Gelatin puddings softened in water
- Canned shellfish, such as shrimp, that need washing. Read the label if you are not sure

At the mix center

Store supplies that are always mixed before use:

- Sugars, flours, and prepared mixes
- Fats, salt, soda, baking powder
- Spices, herbs, colorings, and flavorings
- Salad seasonings and vinegars

At the serve center

Store foods served from the package, can, or bottle:

- Cookies, crackers, ready-to-eat cereals
- Pickles, olives

Spreads, jellies, jams,
preserves
Canned fruits and bot-
tled drinks

At the range center

Store foods used first with
boiling water:

Tea, coffee, and coffee
substitutes

Cereals to be cooked

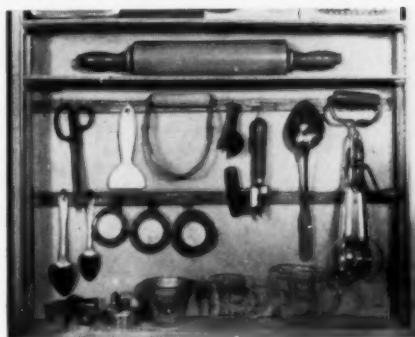
Macaroni and such
pastes

Canned vegetables,
none of which need
water



Figure 4. Swing cabinet, mix and sink sections. This view shows the right-hand section above and the center section facing it, each $3\frac{1}{2}$ inches deep. The foods shown on nine adjustable shelves in these sections are those used first in mixing and at the sink. An 18-inch panel of the center section and the lower right-hand section of the cabinet, which is 10 inches deep, hold the mix center utensils. Hooks for small tools and cut-back shelves and files for larger utensils make each item easy to see and to grasp.

Figure 5. Close-up of hanging panel for small tools in swing cabinet. This section of the cabinet shown in figure 4 holds from 18 to 24 small tools and utensils used at the mix center. It is 24 inches wide by $3\frac{1}{2}$ inches deep by 18 inches high, and is fitted with two shelves and two adjustable rods fitted with hooks. Each article is readily accessible.



Does this seem like too much work to you? It may be at the start. You will find, though, that you can simplify your kitchen work greatly after you once have your storage arranged this way.

As you study the illustrations, you will find that some of the cabinets have utensils and supplies stored together. That is just good sense, isn't it? The idea, again, is to get rid of needless work for your feet, your hands, and your head.

On the kitchen side of the storage wall (figure 7), the upper center and left sections, including the doors, are used to store 150 to 175 items of packaged, bottled, and canned foods. The dimensions of this unit are 48 inches wide by 8 inches deep by 48 inches high, with one exception. The lowest shelf is only 4 inches deep, leaving a depth of 12 inches on the dining-room side for dinner plates and serving bowls. To permit all packaged items to be stored one row deep with a minimum of waste space, 4 depths of shelves are used. On the right, the cabinet proper has shelves 5 inches deep and door shelves 2 inches deep, leaving a

Figure 6. The mix-center cabinet. This cabinet is designed to hold 40 utensils commonly used first at the mix center, and from 110 to 125 packaged, bottled, and canned foods. The foods include all those used at the mix center, and also others used first at sink and refrigerator.

The over-all outside dimensions of the base cabinet are 45 inches wide by 21 inches deep by 34 inches high. The counter is lower than on conventional cabinets to make it suitable for beating and mixing. The base cabinet is divided into 5 compartments as follows: bin-drawer, 12 x 18 x 9 inches, for bread; drawer, 11 x 18 x 12 inches, for flour, sugar, prepared mixes, and 3 pounds of fat, stored in original containers; drawer for food grinder and grater, 12 x 18 x 3½ inches; drawer with adjustable dividers for filing all the various baking pans, 25 x 18 x 12 inches; and a pull-out section fitted with shelves, 11 x 18 x 25 inches, for mixing bowls, casseroles, angel-food cake pan, and sifter.

The upper section of the mix-cabinet is 46 inches wide by 5½ inches deep (exclusive of doors) by 46 inches high. The lower 15 inches of this section is arranged as a storage panel to hold the measuring, blending, and testing devices; egg beaters, cutters, and rolling pin.

The 30-inch section above this panel is fitted with 2 storage doors 2½ inches deep (inside measure). The main cabinet has 4 adjustable shelves which hold the large and tall containers of mix supplies. Sandwich fillings and canned juices and fruits also are accommodated here. The top shelf is not placed higher than 69 inches from the floor to permit easy reach over the counter.

The right door with 5 shelves holds additional mix supplies. The left door, also with 5 shelves, holds the waxed paper and the foods requiring water first. Presumably, this door would swing open over the sink counter.

leeway of 1 inch when the door is closed. On the left, the cabinet proper has shelves 4 inches deep with door shelves 3 inches deep, again leaving a leeway of 1 inch when the door is closed. The door shelves begin 8 inches from the bottom of the door to prevent interference with articles





Figure 7. Storage wall, packaged supplies. The storage wall, with an overall inside dimension of 6 feet wide by 16 inches deep by 6 feet 6 inches high, is designed to form a storage unit between kitchen and dining room. Other views shown in figures 17 and 18.

on the lower 4-inch-deep cabinet shelves. All shelves are adjustable in height. Door shelves should have narrow guards to keep items in place.

In the lower part of the storage wall on the left are a drawer 24 inches wide by 16 inches deep by 4 inches high with three dividers parallel to the front for small mix utensils; and a series of three bin-



Figure 8. Storage wall in use. Since the storage wall provides no counter space, a service cart is needed to carry supplies to the work center where used.

drawers, each 8 inches wide by 16 inches deep by 10 inches high for packaged flours, sugars, and commercial mixes. At the base is a drawer 24 inches wide by 16 inches deep by 16 inches high fitted with seven adjustable dividers. This makes a file for the various bake pans used at the mix center. One divider at the front and parallel to it gives a 1-inch file for cookie sheets and cake cooler. The other six dividers are at right angles to the front. All of these drawers open on the kitchen side only.

The center lower section has a compartment 24 inches wide by 16 inches deep by 14 inches high fitted with a shallow tray for silver and

adjustable pull-out shelves for linen. These are accessible on both the kitchen and dining-room sides of the storage wall. Below is a drawer 24 inches wide by 16 inches deep by 16 inches high, which may be used for empty containers or paper, opening on the kitchen side only; or lined with tarnish-proof fabric for silver hollow ware, opening on both sides. This space may be divided into two shallower drawers if desired. It might serve for the storage of toys.

Important points to remember are:

Find your own easy shoulder reach and elbow circle for comfortable work.

Store things, within your own limits, where you use them first. This means at the sink, the range, the mix center.

Place things where you can see them at once. This means storage one row deep.

Keep things where you can get them easily. This means narrow shelves.

STORAGE OF UTENSILS

No two families ever have the same number and kind of cooking utensils. But those they have are all used in the same three ways.

Some you use first with water, such as saucepans. Some you use directly at the range, such as skillets. The others you use in mixing food before you bake it or roast it or chill it. You can simplify your kitchen work by using this idea for the storage of your utensils, too.

Many persons think they use this plan, but they really don't use it. They store all the covers with the saucepans at the sink. They keep roast pans at the range. Each means extra handling and often extra walking to get a meal. Don't you agree that covers are used first at the range? Roast pans are used first at the mix center where meat loaves are made or where roasts are seasoned and floured or tied.

The Plan

This plan was used to build storage cabinets for utensils:

At the sink center

You want storage space for:

Saucepans, double boilers, preserving kettles, or soup kettles

Colanders, strainers, funnels

Brushes and small tools for cleaning, paring, slicing, or dicing fruits

- and vegetables; scissors and knives
- Measuring cups, graded sizes for liquids
- Dishwashing and clean-up utensils
- Garbage can and trash basket

At the mix center

You want storage space for:

- Measuring and mixing spoons, sampling spoons, and measuring cups
- Mixing and sifting bowls, spoons, sifter, and beaters
- Rolling, grinding, and cutting tools for doughs, meats, and fruits and vegetables; cutting and moulding boards
- Baking cups, roasting pans, sheets, casseroles, trivets, coolers, and such

(The mix center might be combined with sink or refrigerator center)

At the range center

You want storage space for:

- Skillets, griddles
- All covers to saucepans, kettles, skillets
- Measuring, stirring, mashing, testing, turning, and carving tools
- Knife sharpener, hardwood cutting board, and wall can opener

At the serve center

You want storage space for:

- Serving trays or cart on wheels
- Electric appliances for coffee, toast, waffles
- Serving china, glassware, and table accessories

(The service center and range center could be combined)

The storage

The whole idea is to save yourself needless walking to get things when you cook. That is why some cabinets show foods and utensils stored together (figures 4, 5, 6). The sink and mix supplies and utensils are combined because they are so often used together (figures 6 and 7). The range cabinet shows foods used first with heat. In figure 16 the utensils and the platters and bowls that need heating are all stored in one spot near the range.

Your ways of doing things may differ from those of the authors. You may want the strainer at the range, a can opener at both the sink and the range. As you look at these cabinets for utensil storage, see which combinations would suit *your* ways best.

Some women like to store everything in drawers; others like to use shelves; still others like to hang things on panels where they can see everything at a glance. All three methods are shown in figures 9 to 16. The best of each has been combined to help to prevent waste time and effort in preparing your meals.

If you want to use drawers for storage:

(1) Have the drawers no deeper than needed for each kind of supply; that is, only one layer deep so you will not have to pull an unnecessary load of utensils to get out a measuring spoon. (2) Make the drawers to pull as easily as a good office-file drawer. This will reduce the strain on your arms, your shoulders, and back.

When you use shelves:

(1) Make adjustable shelves, so that you can fit your own utensils at the spots most convenient to your reach and to your eyes. This also helps to keep storage one layer deep. Then you have no unnecessary picking up and putting down to get the pan you want. (2) Keep the shelves shallow for storage one row deep—for the same reason.

If shelves need to be deep because of work counters, such as at the sink, cut out the shelves to make a curved-in front (figures 11 and 16).

This helps to prevent clutter and overcrowding. It helps you to see everything on the shelf at a glance, or you can make the shelves easy to pull out. Some shelves, like those in the under-sink cabinet (figure 9), can be pulled out with your foot. The deep cut-back shelves in the side of the sink cabinet can be pulled by hand (figure 11). They should be built so that you can pull them with no effort.

If you like panels to hang your utensils on, keep them narrow, too, and within your reach if you use them over the sink. Panels can be used without doors (figures 13 and 14). If you want to get the pans out of sight, use a door combined with another work center for utensils. This combination of two panels is shown in figure 15. One side is for sink utensils, the other for those used at the range.

If you sit at the sink, you need the space underneath open so that you can be comfortable, and you will want the dishwashing utensils and supplies close by—not across the room. This arrangement is shown in figure 11.

If you stand at the sink, the pull-out panel helps to simplify the motions

(figure 10). Notice that the pan and soaps are on the right-hand side. The drain and brushes are on the left. You pull them all out with one set of motions. This may be something for you to consider.

Important points to remember are:

Store utensils within your own easy shoulder reach.

Store the heaviest of those you use most often within comfortable reach from your elbow.

Store things one row deep on shelves; one layer deep in drawers.

This means shallow drawers and pull-out cut-back shelves.

Store things where you use them first. This will simplify your kitchen work.



Figure 9. Under-sink cabinet, interior. At the base of the right-hand section of the cabinet is a pull-out shelf 10 inches wide by 18 inches deep, placed 4 inches above the floor of the cabinet so that it can be pulled out with the foot. On this shelf are placed reserve cleaning supplies other than those which might be dangerous to children. Beside it is space for a 10-pound container of pet food or other large container or utensils. On the 14-inch-wide door of this section a 10-inch by 10-inch shelf for a garbage container is placed.



Figure 10. Under-sink cabinet, pull-out panel and door. This cabinet is planned for the cleaning utensils and supplies used at the sink. The over-all outside dimensions are 30 inches wide by 20 inches deep (inside 18 inches) by 30 inches high. (Height includes toe space.) At the left is a pull-out panel 14 inches wide by 18 inches deep by 26 inches high. A dish drainer and two brushes are hung on the left side of this panel, and a dishpan and two shelves for cleaning supplies are placed on the right side. Each shelf is 7 inches wide by $3\frac{1}{2}$ inches deep. The lower shelf is 8 inches from the base of the panel, and the upper shelf is 10 inches higher.



Figure 11. Sink center cabinet with shelves. This cabinet accommodates all the utensils used first at the sink. Over-all outside dimensions for the base cabinet are 30 inches wide by 20 inches deep (18 inches inside) by 36 inches high. It has three pull-out shelves to hold nine utensils. Door racks to hold dishwashing equipment may be used when no under-sink storage cabinet is available. When doors are used for storage, the interior shelves are each 12 inches deep; without door storage the top shelf is 16 inches deep, the second, 17 inches, the bottom shelf is 18 inches deep. This cut-back arrangement increases the ease of seeing all the contents at one time.

The shallow cabinet above the base cabinet has over-all dimensions of 30 inches wide by 6 inches deep by 12 inches high, set 4 inches above the counter. The left section, 18 inches wide, is fitted with a slanting file with dividers to hold 15 small items required at the sink. The section on the right, 12 inches wide, consists of two shelves to hold such items as measuring cups, juicer, or drinking glasses.



Figure 12. Sink center cabinet with drawers. For those who prefer drawers the same size cabinet as that shown in figure 11 may be fitted with four drawers. The top drawer, 5 inches high, is divided into two sections and used for paper supplies and dish towels. The other drawers, 6, 7, and 10 inches high, respectively, hold the 10 utensils used first at the sink.



Figure 13. (above) Vertical panel, sink utensils. This panel has seven adjustable racks to accommodate all the utensils used first at the sink. Five racks with hooks hold nine pans and kettles, large and small sieves, can opener, funnel, and colander; one slotted rack holds paring, scraping, and measuring tools; and one shelf rack holds a set of measuring cups and a juicer. The most frequently used utensils are nearest elbow height. The over-all size is 24 inches wide by 10 inches deep by 6 feet, 6 inches high. The depth can be reduced to 6 inches if the 3-gallon seldom-used kettle is stored elsewhere.

Figure 14. (below) Vertical panel, range utensils. This panel has seven racks adjustable in height to accommodate 5 utensils used first at the range for top-of-stove cooking; five covers; fifteen small devices; and pot holders. The over-all size is 24 inches wide by 4 inches deep by 6 feet, 6 inches high. The most frequently used utensils are placed nearest elbow height. One rack is slotted for small devices that will not hang. One is a pocket for covers, and the remainder have hooks for hanging.



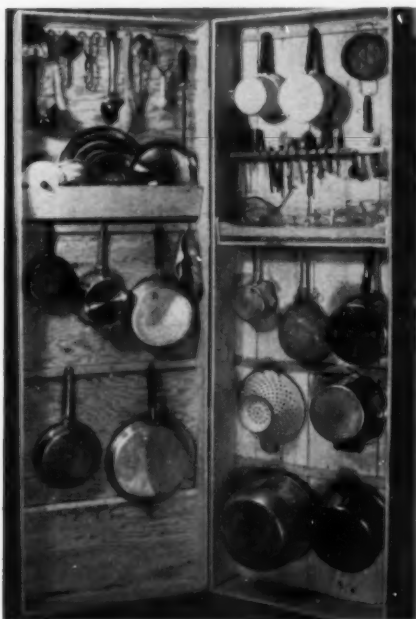


Figure 15. (above) Combination hanging panels for sink and range storage. When the two panels are hinged together forming one cabinet they hold all the utensils and small tools used first at the sink and at the range. When closed, the over-all dimensions are 24 inches wide, 10 inches deep, and 6 feet, 6 inches high. In this arrangement one panel closes against the other, forming a door.

Figure 16. (below) Sixteen-inch cabinet for range supplies. This cabinet accommodates all the utensils, foods, and some of the serving dishes used first at the range. Space is provided for five standard utensils used for top-of-range cooking, and two large infrequently used utensils; five covers; fifteen devices for measuring, testing, turning, stirring, mashing, and serving; one set of measuring cups; twenty food supplies; nine serving bowls and platters; and four serving trays.

The over-all size of the cabinet is 16 inches wide by 14 or 16 inches deep by 6 feet, 6 inches high. The shelves are curved back and adjustable in height. The door is fitted with four racks to hold the small utensils and covers.



THE STORAGE OF CHINA AND GLASSWARE

The same storage ideas are used here as for supplies and utensils. Build the cabinet to fit the things you want to store. Keep the shelves within easy reach of the women who will use them. This means, as you see from the illustrations (figures 18, 19, 21, and 22), that shelves for the dinner-size plates begin at counter level instead of at the usual over-



Figure 17. Storage wall, china and glassware for daily use. The extreme right section of the storage wall opens on both the kitchen and the dining-room sides. The upper part with five adjustable shelves is used for the storage of everyday dishes. The door on the kitchen side of this section is fitted with 3-inch shelves to hold glasses (above) and to make a file for platters (below). The counter-high shelf is used as a pass window between the kitchen and the dining room. The section below the pass window has a horizontal file 18 inches wide by 16 inches deep by 14 inches high, with five dividers for the storage of large platters, plates, or trays. Beside it is a vertical file 6 inches wide, of the same depth and height, for trays. The lower section, 16 inches high, is for flower containers or other table decorations.

shoulder height. This is one way you can prevent breakage. You can see what you lift. So can the children. This arrangement is another way to spare your upper arms, your shoulders, and your back. You don't tire yourself needlessly, because the heavy things are stored within your elbow circle where you can lift them easily. The less used and lighter-weight items are stored above and below the shelf that holds the dinner plates.



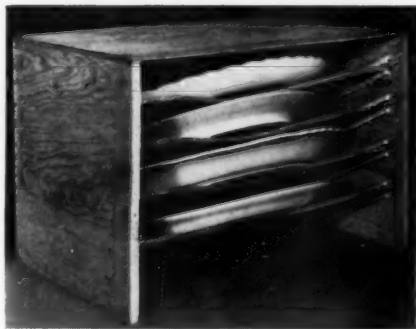
Figure 18. Storage wall, china and glassware, dining-room side. The dining-room side of the storage wall has the 24-inch everyday dish section on the left, with files and flower-container section as described in figure 17. On the right, the upper section is used for occasional or best dishes, a set of 12 with 18 cups, saucers, and dessert plates. This section is 48 inches wide by 48 inches high. All shelves are 8 inches deep, except the lowest shelf which is 12 inches deep. Identical items, such as cups and stemware, are stored two rows deep, yet every item is easy to see and to grasp. (The photograph shows the cabinet used for testing. It is assumed doors would be added in a finished cabinet.)

Figure 19. Thirty-six-inch cabinet for china and glassware. This cabinet, 36 inches wide by 12 inches deep by 6 feet, 6 inches high, is designed to hold a set of 12 dishes with 18 cups, saucers, and dessert plates, making a total of 150 pieces of china and 56 pieces of glassware. It has six 12-inch, adjustable shelves beginning at counter height, 36 inches above the floor. Below counter-height on the left is a slanting file with four dividers (figure 20), 18 inches wide, 12 inches deep, and 14 inches high, to hold platters and plates greater in diameter than 12 inches. To the right are two partial shelves for serving bowls. The two lower shelves, which are unassigned, may be used for seldom-used articles. Only identical items are stacked or stored more than one row deep. Each piece is easy to see and to grasp.

Order 12-inch lumber for the shelves. The actual size may vary; an 11-inch shelf is wide enough. This applies for all storage cabinets for china.



Figure 20. Close-up of the slanting file. This file is designed to store platters and plates greater in diameter than the 12-inch depth of the cupboard (figure 19). The diameter of the largest article to be stored sets the angle of slant. Dividers may be placed $1\frac{1}{2}$ or 2 inches apart.



All the cabinets illustrated have adjustable shelves, so you may place your dishes where you need them and within a comfortable reach. There are many more shelves than in older cabinets and they are closer together. The way things are stored makes this difference.

You usually lift from the shelf at one time, a stack of four, six, or eight plates of the same size. You do the same with sauce dishes, cereal bowls, and soup bowls. In the illustrations (figures 17, 18, 19, 21, and 23), only the plates and bowls of the same size are stacked and they are in single rows. You lift only the ones you want. You don't have to lift two or three smaller sizes off the top to get what you want from underneath. Neither do you shift a stack of different sizes from the front to get a larger size at the back.

The shelves are built only as deep as you need for the things you want to put on them (figures 17, 18, 21, and 23). None of the china cabinets is deeper than 14 inches. A depth of only 10 to 12 inches is needed for the dinner-size plates and for some serving bowls.



Figure 21. Twenty-inch (inside dimension) cabinet for china in daily use. This cabinet, which is 20 inches wide by 14 inches deep by 6 feet, 9 inches high, takes care of a set of eight everyday dishes, or 64 pieces of china, 31 pieces of glassware, three pieces of electrical equipment, from four to six serving trays, and three additional service items. Also, two drawers 20 inches wide by 14 inches deep by 3 inches high hold the everyday silver and some table linens.

The shelves at and below a height of 36 inches from the floor are 14 inches deep, and the file section for trays is 6 inches wide by 14 inches deep by 20 inches high. Some trays and placemats are more than 14 inches wide. Measure yours and build the storage space accordingly. Above the dividing shelf are three shelves 8 inches deep and two shelves 10 inches deep. The door rack for platters and chop plates, 4 inches deep, fills in the space opposite the 8-inch shelves. Only identical items are stacked or stored more than one row deep. Each item is easy to see and easy to grasp.



Figure 22. Drop-front cabinet, drawer section. Four drawers are placed beneath the drop shelf for cutlery and linen. The two left-hand drawers are 24 inches wide by 12 inches deep; the right-hand ones, 12 inches wide by 12 inches deep. The top drawers are 3 inches high; the lower ones, 5 inches. The cutlery drawer, top right, is fitted with three adjustable dividers. The shelves under the drawers are unassigned. Doors may be added if desired.



Figure 23. Drop-front cabinet, china section. This cabinet is designed for small kitchens. The drop-front may be used for serving or as eating space for one or two persons. It holds 64 pieces of china, 31 pieces of glassware, 4 trays; silver, table linens, dish towels, and aprons. The over-all size is 37 inches wide (36 inside) by 12 inches deep by 5 feet, 6 inches high. The shelf formed by the drop-front is 36 inches from the floor. The dinner-plate shelf and drop-front are each 12 inches deep. The two shelves above these are each 8 inches deep, and the upper two shelves are each 6 inches deep. The top shelf extends only 24 inches of the total width, leaving a 12-inch space for tall items. Racks 4 inches deep on each 18-inch by 18-inch door fill in the space opposite the 6-inch shelves, and take care of platters, chop plates, and trays.

All other shelves can be kept 8 inches deep as they are in the storage wall (figure 18). Some even can be 6 inches and 4 inches deep for smaller plates and for glassware (figures 23 and 24).

When you have narrow shelves, you can use racks on the doors for tumblers (figure 17), for platters, or for trays that need more than a 12-inch depth (figures 17, 21, and 23). Another way to file larger platters in a 12-inch cabinet is to use a slanting file (figure 20).

Files simplify your storage. You can see all the platters at a glance. You lift only the one you want, and you waste no time and effort lifting a stack to get the medium-sized platter in the middle. Other kinds of files are shown in figures 17, 19, 21, 23, and 25.

Cup hooks are not used because they increase breakage and waste your time. Cups, stacked by twos, can be lifted from the shelf four at one time. Cups and glasses that are *alike* in size and shape can be stored in two rows on an 8-inch shelf (figures 18, 21, and 23), and even three rows deep on a 12-inch shelf (figure 19). If you want to simplify your storage and save your time and your dishes, do not store any other china or glassware three rows deep.

Almost every cabinet has storage for silver and linen with the china and glassware (figures 17, 21, 23, and 24). This means less walking back and forth, and all the things you need to set the table are stored together.

Almost every cabinet has a file for trays, because trays are time-savers when you set or clear the table. A tray on wheels is especially helpful (figure 24), and will also help to keep you from getting overtired. One trip can do the work of the many you take without a wheel tray.

The storage wall (figures 17 and 18) is another way to cut trips. The section for the everyday dishes (figure 17), is open all the way up on both the kitchen and the dining-room sides. This can be a great time and step saver in many homes.

No attempt has been made in the cabinets illustrated to store the china and glassware at the center where they are used first, because the ways of serving meals vary in each family. There is no reason why you should not plan space at the range for all china that you like warmed. This might mean plates and cups as well as the platters and bowls.

In the same way you can plan space near the refrigerator for the china and the glassware that you like chilled. This might be salad and dessert plates and the glasses for cool drinks.



Figure 24. Utility cart, table service for eight persons. The same cart may be used as a movable storage center for a complete set of dinnerware for eight, plus additional frequently used electric appliances.

The shallow drawer at the left partitioned for silver is 10 inches wide, 19 inches deep, and 3 inches high. The drop-front drawer at the right, 16 inches wide, has two pull-out trays for storage of doilies and tray cloths.



Figure 25. Utility cart, service for four. This cart, 32 inches wide, 20 inches deep and 36 inches high, with two shelves, one 6 and one 8 inches deep above counter and two full-sized shelves below, accommodates a complete meal service for four. Platters or trays may be stored in the shallow file left, placemats and silver in the shallow drawers.

Important points to remember are to:

Store your china and glassware within your own easy shoulder reach.

Store the heavy dinner plates and bowls at counter level instead of above your shoulder reach.

Store glassware and platters that you use every day within your elbow circle of comfortable reach.

Store above and below this elbow circle the other items that you use less often.

Stack plates and bowls only if they are of the same size and shape.

Stack cups by twos. They may be two or three rows deep.

Store one row deep those things of different size and shape.

Store two rows deep on narrow shelves those things of the same size and shape.

Store three rows deep only those things of identical size of which you have a large number, such as company ware.

Keep your shelves as narrow as the supplies to be stored.

Store platters of different sizes in single files.

Store bowls of different size and shape on half shelves no deeper than needed.

Plan space in the china cabinet for all the things you need to set the table.

Plan storage space for trays that can reduce your needless trips.

Use a tray or cart on wheels to save you time and energy.

If you plan to build a cabinet or remodel one, take ideas from this bulletin that seem good to you. Adapt these ideas and the dimensions to suit your needs. To plan your cabinet dimensions, check the amount of space your equipment and supplies require and the space you have available. Your items may require a different amount of space or number of shelves than needed for these cabinet designs. You may have more or less space available than was used in these designs.